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The Material Background of the Earliest Civilization in Crete

THE MATERIAL BACKGROUND OF THE EARLIEST CIVILIZATION IN CRETE

BY

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THESIS

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I HEREBY RECOMMEND THAT THE THESIS PREPARED UNDER MY SUPERVISION BY Miriam Cynthia Akers

ENTITLED The Material Background of the Earliest Civilization in Crete

BE ACCEPTED AS FULFILLING THIS PART OF THE REQUIREMENTS FOR THE DEGREE OF Master of Arts

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INTRODUCTION.

The object of this study was to determine, from the evidence of archaeological excavations, some aspects of the material background of the Minoan civilization in Crete, as a basis for constructing a sound idea of the social and economic institutions of that civilization. Since our whole knowledge of these great and long-vanished people, the Minoans, is so new, being secured almost entirely from excavations of the past twenty years, and so fraught with romantic possibilities suggested by the ancient Greek legends of Crete, it has been necessary to treat the subject from a very critical standpoint. Attempts by popular writers to present an idea of the social life and institutions of that age upon inadequate evidence and hasty deductions are apt to be very misleading. Hence, I have attempted to weigh carefully the evidence from various sites and compare it, drawing conclusions based upon scientific knowledge of subsequent civilizations.

The most important part of my study has been a careful examination of Sir Arthur Evans' reports of his excavations of the Palace at Knossos, published in successive volumes of the Annual of the British School at Athens, 1899-1906. As each of these reports not only amplifies, but corrects and modifies, those that precede, it has been necessary to use great care in examining the evidence at each stage of the excavations and comparing it with that of succeeding stages. This was the more imperative because no comprehensive scientific treatment of the civilization in Minoan Crete has yet been written. The same method applied of course to reports of excavations at Palaikastro, Praesos, Petsofa and other sites, published in the Annual of the British School of Athens and

other Journals.

I have made use also of numerous monographs by various scholars and excavators relating to many of the problems presented by the evidence of archaeology in Minoan remains. Many of these are available in the journals, the greater part of six volumes of the Annual of the British School at Athens and an equal number of the Journal of Hellenic Studies being made up of such contributions. Supplementary reading in the books by Burrows, Hall, Hawes and others have been full of interest and rich in suggestion.

In drawing inferences from the archaeological evidence regarding the knowledge and use of various plants and animals by the Minoans, I have based my conclusions upon a comparison with previous scientific knowledge of these plants and animals as given in Otto Keller's "Die Antike Tierwelt" and Victor Hehn's "Kultur-Pflanzen und Haustiere".

I have used throughout the chronological scheme adapted by Sir Arthur Evans, in which the whole extent of Minoan civilization is divided into Early, Middle and Late Minoan periods, each of these in turn being subdivided into three stages. I have used Dr. Evans' abbreviations to indicate these periods; for example, the second stage of the Middle Minoan period is indicated as M.M. II. In attempting to date evidence more closely than by merely placing it within one of these periods, and in trying to relate the evidence to contemporary Egyptian chronology, I encountered much difficulty, as the whole question is still unsettled in the minds of scholars, some holding to one chronological scheme and some to another, according as they adopt the "traditional" or the "Berlin" dating of Egyptian evidence. For the Egyptian chronology I have followed the dating adopted by Hall in his "Ancient History of the Near East.

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" " " Mycenean Tree and Pillar Cult. J.H.S. XXIII, London, 1901.

" " " New Archaeological Light on the Origin of Civilization in Europe. "Science", London, Sept., 1916.

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" " " Ancient History of the Near East. London, 1913.

" " " Oldest Civilization of Greece. London, 1901.

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Journal of Hellenic Studies. Abbreviated, "J.H.S." Vols. XIV-XXIV. London, 1894-1904.

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[1] This bibliography is not intended to be an exhaustive list of works on the subject. I have indicated merely the important books and articles which I have read or to which I have made frequent reference.

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Reisinger, Ernst, Kretische Vasenmalerei vom Kamares bis zum Palast-Stil. Berlin, 1912.

Schliemann, Henry, Tiryns. New York, 1885.

Seager, R. B., Explorations in the Island of Mochlos. Boston and New York, 1912.

I. DOMESTICATED ANIMALS

The earliest evidence for domestication of animals on the island is to be found in the pictographic sign-writing developed by the indigenous Cretan stock. In an article published in J.H.S. 1894[1], Sir Arthur Evans reproduced and interpreted many of these signs which, occurring on seals found in Central and Eastern Crete, had convinced him of the existence of a pre-Phoenician civilization on that island. From the circumstances of the discovery of the earliest seals which were distinguished from the later class by their fabric and their three-sided shape, Dr. Evans dated them as contemporary with the XIIth Dynasty of Egypt, 2500-1800 B.C., according to the dating accepted only in England[2]. This period is comprehended in his Middle Minoan II and Middle Minoan III periods. According to the "Berlin" dating, the XIIth Dynasty and the contemporary M.M. II and III ages fall 6-700 years later, the XIIth Dynasty beginning about 2000 B.C.

The following is Dr. Evans' description of some of the pictographic representations on these seals, obviously significant in connection with the question of domesticated animals, "In a large number of instances taken from stones of the earlier type gathered in various parts of Crete, one side is intended to represent the owner of the seal. These pictographic stones bore a personal relation to the possessor. Several examples of the more primitive type seem to indicate the quality

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[1] "Primitive Pictographs and a Pre-Phoenician Script from Crete and the Peloponnese". J.H.S., Vol. XIV, pp.270. ff.

[2] Burrows, "Discoveries in Crete", p. 67.

and pursuits of the owner. On the three-sided stone, Fig. 55, obtained by me from Praesos, the owner was evidently a master of flocks and herds. On one side he appears between a goat and an early form of vessel with handle and spout, bearing on his shoulders a pole from which are suspended what appear to be four skin buckets, no doubt intended for milk. On the second side, he is seen seated on a stool holding in each hand a two-handled vase and on the third appears a goat - a further allusion to his flocks." Various combinations of these pictures of the owner with goats and milk vessels suspended from a pole, appear on the seals reproduced in Figs. 57, 59, 60, 61 and 68. Fig. 66 shows a goat and a man surrounded by rude representations of a duodecimal system, an attempt, perhaps, to state the number of the owner's flock of goats.

On p. 307, Dr. Evans described a sign reproduced in Figs. 22b, 24a, 25a and 29b as a gate, door or part of a fence, Fig. 34b as a gate, and Fig. 32c as a fence. It seems a plausible inference that since these signs for gate and fence occur in connection with animals on the earliest pictographic seals, long before these rude signs had been incorporated in a linear script, they might have had reference to enclosures for domesticated animals. Mrs. Hawes in "Crete the Forerunner of Greece", p. 117, mentions that one of the best examples of the pictorial seals is the exquisitely cut design of a bull in a stall on a gem found at Gournia in a Middle Minoan tomb. Again, on p. 309, Dr. Evans interprets a sign in Fig. 37a, as a bull or ox, the seal being of a very primitive type; Fig. 26a as the horned head of an uncertain animal, apparently an ox; and Fig. 21a as the skull of a bull or ox. All these signs, occurring as they do in various combinations and being found on seals from different parts of the island such as Praesos, Goulas, Siteia and Knossos,

make it reasonably certain that flocks of goats and cattle were common in M.M. periods. Moreover, since these early engraved stones were an indigenous development, the animals may have been familiar in domesticated flocks for some time before they were ever represented in the first rude attempts at carving.

On a seal of the next period, that of the XVIII th Dynasty of Egypt or L.M. I, the signs for ox-head, gate, and fence occur on the same seal. Still later, when linear script became common in L.M. II, cattle often appeared with it as illustrative on the clay tablets. In this period, also, cattle and goats figured on many seal impressions found in the Room of the Archives at Knossos and elsewhere. Of these, the representation of a boy milking a cow, found at Knossos[1], is perhaps the most significant of domestic use.

Many other monuments testify to Minoan herds of cattle and goats. An indication of the grazing of large herds of cattle comes from a Minoan cemetery at Petsofa where Mr. Mosonquet found a bowl with a modelled interior decoration of miniature oxen, "reclining rank behind rank to the number of nearly two hundred, with the figure of a herdsman upright in the center"[2]. Among the L.M. sealings found at Zakro by Mr. Hagarth were many that represent bulls, cows and goats. These are enumerated in J.H.S. Vol. 22, pp. 86-88. Especially numerous are the suggestions of the domestication of cattle in the L.M. II remains from the Knossian Palace. The fragments of enamelled plaques of faience, supposed by Dr. Evans to have been decorations of a great cypress chest, show pastoral scenes of goats and oxen among fruit trees and running water[3].

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[1] B.S.A., VIII, p. 77.
[2] B.S.A., VIII, p. 294.
[3] B.S.A., VIII, pp. 14 ff.

That these are domesticated animals seems plausible from that fact that Minoan houses and towns are represented as a part of the same decorative scheme. At Knossos there have been found also ox-heads of bronze filled with lead of which Burrows[1] says, "These were no doubt weights. Large amounts of gold seem to have been beaten out into the same shape and accepted as representing a fixed value. Such gold ox-heads figured in inventories on the clay tablets at Knossos[2] and on the Tomb of Rekhmara as part of the tribute brought by the Keftians, men of the isles in the midst of the sea, to Egypt in the early fifteenth century." Similarly, the small bronze couchant oxen filled with lead, found at Tylissos, are accepted as weights[3]. Obviously, the use of figures of oxen as representing definite weights might be a survival from some very early time in which oxen had already a definite economic value, perhaps being used as a standard unit for calculating value in exchange. It seems reasonable to assume that oxen so used should have been domesticated oxen.

The warriors on the Chieftain Vase from Hagia Triada, belonging to early L.M. I, hold inter-locked tower-like shields on which ox tails are visible, showing that hides were used as a covering for shields, the frame-work being no doubt of metal in this late period. Perhaps ox-hides were employed also in the making of leather shoes and high puttees, prominent as a feature of Minoan dress[4]. In J. H. S., vol. 17,

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[1]Burrows, "Discoveries in Crete", p. 15.

[2]B.S.A., VI, p. 58.

[3]Hall, "Aegean Archaelology," p. 68.

[4]Hall, "Aegean Archaeology", p. 241.

p. 335, Sir Arthur Evans shows in an article entitled "Further Discoveries of Cretan and Aegean Script", that an instrument, the arbelon, for cutting leather is of frequent occurrence on the pictographic seals.

The fact that ox-head signs and cattle are frequent on seals of people indigenous to Crete, and the prominence of the bull in distinctly Cretan traditions, such as the Minotaur and the story of Zeus and Europa, would seem to indicate that the wild bull had been native in Crete. Moreover, the very ancient and favorite sport of bull-grappling[1] among the Minoans might point to an early familiarity with the wild bull. The Minoan fondness for the bull and bull's head in all periods of their art, and their splendid representations of it in fresco and relief are well-known indications of a racial tendency that must have had very early beginnings. Examples are the splendid life-size relief of a bull's head in painted gesso duro[2], the bull's head rhyton and frescoes of bull-leaping and bull-grappling[3] found at Knossos. The furiously charging bulls on the largest of the three steatite bases from Hagia Triada also illustrate this[4].

Many of the monuments of oxen have a distinct cult connection. Terra-cotta figurines of oxen were common in remains of the L.M. period on many Minoan sites such as Praesos and Gonlas[5], and no doubt had a votive significance. At Palaikastro[6] were found many fragments of large and small votive clay figures of oxen. Likewise, the M.M. clay figure of a bull from Mochlos[7] is evidently decked in trappings for some

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[1] B.S.A., VII, pp.94, 95.
[2] B.S.A., VI, fig. 10.
[3] B.S.A., VI, p. 12 and X, p. 45; VII, p. 94 and VIII, p. 74.
[4] Burrows, "Discoveries in Crete", p. 34.
[5] J.H.S., XIV, p. 277.
[6] B.S.A., IX, p. 376.
[7] Seager, "Explorations in Crete", fig. 29, p. 60.

religious rite. The splendid faience relief of a cow and calf found in the Temple Repositories of the Central Palace Sanctuary at Knossos and belonging to the first period of the Later Palace has reference rather to the cult of the Mother Goddess of Minoan Crete than to any domestic use[1]. A distinct religious significance probably attaches also to the seal impressions from these Repositories representing the cow and calf[2] and to Minoan gems engraved with the same subject.

Though this relation of the bull and the cow and calf to the religious cult is very noticeable, it does not appear that in any period the animals were tamed merely for cult purposes, exclusive of economic uses. In his "Die Antike Tierwelt", Vol. I, pp. 231 f.f., Otto Keller shows that among all the early people of Asia Minor, Syria, Babylon, Assyria and India by whom the ox was one of the first animals domesticated, it was from the first connected with the religious cults; as, for example, the cult of Baal Moloch, or that of the Sun-Bull in Egypt. On this subject, Burrows says[3], "The choice of the bull for the monstrous Minotour shape was not dictated by any worship of a Bull-Man in Minoan times, nor by that of the bull either, save in so far as the bull was the chief animal of sacrifice and associated with other objects in cult scenes. The principal, if not the sole reason that the story gathered

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[1] B.S.A., IX, pp. 59, 71.

[2] B.S.A., VI, p. 12.

[3] Burrows, "Discoveries in Crete", pp. 128 f.f.

around the Bull was the actual historic fact of the Minoan bull-ring and the frequency of its representation on frescoes and gems."

If, as some scholars believe, the Vaphio Cups were made in Crete and reflect Minoan life[1], we have good evidence that the wild bull still existed there so late as the L.M. I period. This theory is entirely possible since the palms that appear on the cups are of doubtful species. In the last edition of Hehn's "Kulturpflanzen und Haustiere" it is pointed out[2] that archaeologists and botanists have yet to determine whether these palms are date-palms or merely dwarf-palms of the kind native to Crete. If they are dwarf-palms, the scenes pictured by the toreutic artist no doubt represent Minoan life. In that case, we are confonted with several theories as to the purpose of the capture of the wild oxen. Keller suggests, from the merciful method of the capture[3] that they were intended to be placed in one of the great parks where the king could hunt them at his leisure. Others believe that the animals are being caught for purposes of domestication and that some of them are tame ones used as a decoy for the wild steers. As Dr. Keller observes, p. 343, "The whole procedure remains a more or less open question". However, the evidence of the Vaphio Cups is perhaps not indispensable to the argument that wild oxen must have been native to Crete. On p. 7 I have shown that other evidence points to their existence on the island from earliest times.

The discussion of early pictographic seals has shown fairly

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[1]Burrows, "Discoveries in Crete", pp. 128, ff. Hall, Aegean Archaeology, pp. 55-57.
[2]Hehn, "Kulturpflanzen und Haustiere", 8th ed., 1911, p. 284.
[3]Keller, "Die Antike Tierwelt", Band I, p. 343.

conclusive evidence that goats were domesticated in Crete as early as M.M. II and doubtless much earlier[1]. That they continued to be used in L.M. periods we have many indications. Goats appear with oxen on the fragments of faience plaques mentioned above[2] from Knossos, and on a large number of seals found in the Palace. Figures of goats were found also among the clay figurines at Palaikastro[3].

Like the group of cow and calf[4], that of the goat and kid has a cult significance, appearing on seal impressions and on a splendidly executed faience relief[5] among the deposits in the Temple Repositories at Knossos. Here again, however, it does not seem that the goat was ever tamed merely for religious uses, as some of these representations of goat and kid appear to be wild. Hence, the connection with the cult probably arose because such representations were naturally symbolic of the Mother Goddess[6].

The domesticated goats were bred from the stock of wild goat or agrimi indigenous to the island with which the Minoans were very familiar. This seems undoubtedly true from the similarities in representations showing wild goats and those obviously meant for domesticated goats. Many L.M. seals[7] from Knossos represent the wild goat running or being pursued by the hunter. That the horns of the wild goat were very early used for bows, is evident from a seal found in Central Crete

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[1] See pp. 3-5 above.
[2] See page 5.
[3] B.S.A. IX, p. 376.
[4] See p. 8.
[5] B.S.A., Vol. IX, Plate III.
[6] B.S.A., IX, p. 59.
[7] B.S.A., VII, p. 101, XI, p. 11.

belonging to the beginning of the M.M. period which shows a horn bow in the hands of a hunter in pursuit of a wild goat[1]. Evidence that the horns of the ibex were so used in L.M. times was discovered on clay tablets found by Dr. Evans in the archives of the Palace Magazines near the so-called "Minoan paved-way". These tablets are a record of pairs of ibex horns, the raw material for horn bows[2]. Thus the wild goat contributed to Crete's ancient reputation for archery, for "if archery was native there, as Pausanias says, and nowhere else in Greece, it was because the wild goat was native in the Cretan mountains"[3].

Sheep, too, seem to have played some part in the domestic economy of Crete, although their part is more difficult to determine. In J.H.S., Vol. 14, p. 341, Mr. Evans gives in Figs. 63b and 64b representations of a long-horned ram which he says is "a not infrequent feature" on the early seals carved with pictographic signs. The horns there shown resemble noticeably the horns of the "Spinx ram" or holy ram of Egypt shown in Fig. 114b, p. 323 of Keller's "Antike Tierwelt", Band I. They are also not unlike the horns of the Mycenean sheep from Vaphio reproduced in Fig. 108, p. 311 of the same work. Unfortunately, these pictographic signs for the horned ram, unlike those of the goat, apparently do not occur in such relations to other signs as to make it possible

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[1] B.S.A., X, p. 59.

[2] B.S.A., X, pp. 58 ff.

[3] B.S.A., III, p. 70.

to infer with reasonable certainty that they were domesticated. In a pictographic deposit of late date at Knossos Dr. Evans found a clay seal impression[1] of an infant and a horned sheep[2], and in the Temple Repository were other representations of the horned sheep along with the Swastika cult sign[3].

In regard to the wild sheep, Dr. Evans says, B.S.A., VII, p. 101, that it is a usual subject on seal impression of gems engraved in the best Mycenean style of engraving found at Knossos. Apparently, there are no representations in Crete of the hunting of the mouflon, as of the native ibex. It would seem probable, therefore, that the mouflon, since it is usual on very Late Minoan or "Mycenean" seals, was known to these late engravers from sources outside of Crete. Perhaps, in that case, the instancesof horned rams and horned sheep mentioned above were domesticated sheep introduced from elsewhere. Therefore, although the mouflon is indigenous to other islands of the Mediterranean, notably Corsica and Sardinia, as well as the coasts of Africa[4] and Cyprus, the evidence seems to indicate that it was not native to Crete; but that the domesticated sheep was introduced to Crete from Egypt before the first representations of it occur in Crete, namely M.M. II. This inference seems plausible because (1) we have well-attested evidence of commerce with Egypt long before M.M. II[5] and (2) we know that the sheep was domesticated in Egypt 6000-5000 B.C.[6] and (3) the resemblance

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[1]B.S.A., IX, p. 88, fig. 60.
[2]Mycenean Tree and Pillar Cult, J.H.S., XXI, pp. 129 f.
[3]B.S.A., IX, p. 55.
[4]Encyclopedia Brittanica, "Sheep".
[5]Hall, "Ancient Hist. of the Near East", p. 36.
[6]Keller, "Antike Tierwelt", p. 309, Band I.

between Cretan and Egyptian horned sheep is evident as noted above[1]. Moreover, the sheep could hardly have been introduced to Crete from Cyprus because the Cyprian variety, according to Keller, p. 318, is identical with the Asiatic sheep which does not resemble the Minoan kind, having up-standing horns.

Keller says, p. 309, "The story that Hercules brought sheep to Greece implies that sheep were first imported to Europe from North Africa. Hercules is here the personification of the Phoenician-Punic traders." Knowing, as we now do, that the Minoans antedated the Phoenicians and performed most of the functions that were once attributed to them[2], it might be as safe to assume that Hercules is rather in this connection the personification of the Minoan seafarers who may have introduced the sheep from North Africa to Greece by way of Crete. Especially does this seem plausible from the fact that the Vaphio sheep resemble the Minoan, as mentioned on p. 11.

The earliest authentic record of the horse in Crete was thought to be a seal impression, apparently of the L.M. II period discovered at Knossos in the House of the Fetish Shrine. Dr. Evans says of it[3], "We see here a one-masted vessel with rowers beneath an awning upon which, not represented as in the hold, but superposed on

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[1]See p. 11.

[2]Hawes, "Crete the Forerunner of Greece", p. 43.

[3]B.S.A., XI, p. 13.

the whole design, stands the greater part of the figure of a noble horse. The superposition must be here taken to be a graphic way of indicating the cargo and, if so, we have a contemporary record of the first importation of horses into Crete." He further concludes, from the dressing of the mane, that the horse pictured is of the same stock as those represented at Mycenae and that the owner of the seal was engaged in transport of the first horses into Minoan Crete, across the Libyan Sea. Most scholars appear to accept these conclusions[1].

Mr. Hawes maintains, however[2], that this was not the first importation, because an E.M. seal in his possession shows that the horse was known in Crete many centuries earlier. Undoubtedly, it may show that the horse was known to some seal engraver in that early period; but his seal seems too isolated for evidence of actual importation of the horse in E.M. times. However, it seems safe to assume that by the time contemporary with Dr. Evans' seal, the early part of the L.M. period, horses had recognized value and use in Crete, since we find them represented on the clay documents of the Palace at Knossos. That horses were used with chariots on the Minoan paved roads, we may infer from the fact that horses' heads are depicted on the tablets in the archives that enumerate chariots, the horse being indicated simply by its head but the chariot sketched in entirety[3]. The chariot is exactly like the Egyptian chariot. Hall, "Aegean Archaeology", p. 143, concludes that both it and the horse were probably

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[1]Burrows, "Discoveries in Crete", p. 14.

[2]Hawes, "Crete the Forerunner of Greece", p. 44.

[3]B.S.A., VII, p. 72.

introduced to Crete from Egypt at the beginning of the XVIIIth Dynasty or the beginning of the L.M. II period, about 1500 B.C. There is no indication that mules were used with chariots in Crete as in Greece at a later period.

How restricted the use of the horse remains may be conjectured from the fact that evidences of it seem to be confined to the Palace at Knossos. Being imported, it was doubtless a luxury enjoyed only by the great lords and used for pleasure and rapid transit. Oxen probably fulfilled the ordinary needs of labor. Not being a war-like people, the Minoans probably never used the horse and chariot in battle.

Near the North Entrance to the Palace, Dr. Evans uncovered two elongated chambers with the appearance of magazines which, from their proximity to the entrance, he regards as "stables for the horses and chariots that occupy so prominent a place in the Palace Archives"[1]. This identification seems not to have been disputed, and may very well be correct. West of the Magazines of the Knobbed Pithoi, he found a stone terrace wall with arrangements for sliding wooden partitions by means of which the space above the terrace wall was divided into compartments which, though too small for stables, may have been pens for some kind of live-stock[2].

Swine figured like other animals on the earliest pictographic seals. In J.H.S., 14, p. 291, Fig. 24c is shown a seal engraved with an unmistakable pig. Moreover, Dr. Evans says[3] that a similar ideograph occurs on a three-sided stone of the earlier Cretan type presented to

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[1] B.S.A., VI, p. 30.

[2] B.S.A., VIII, p. 12.

[3] J.H.S., XIV, p. 210.

the Ashmolean Museum by Mr. J. L. Meyer. These early seals, as was shown above[1], belong to the M.M. periods.

At a later period, L.M. I, we have evidence of the pig in the extreme eastern part of the island, as this animal is easily identified among the clay figurines of animals from Palaikastro[2]. At Knossos, one set of the clay tablets taken from the Room of the Chariot Tablets refers to swine[3]. If these tablets were as Dr. Evans conjectures[4], "documents referring to the Royal Stores or Arsenals, filed in different boxes according to the subjects", we may assume that the herds of swine owned by the lord of Knossos were of sufficient importance and value to command a separate box for their records.

There is apparently no evidence of the wild boar in Crete. If wild swine were native in the island, it is possible that since the country was so thickly populated they were very early killed off. On the other hand, it seems plausible that, even if wild swine had been native and had been domesticated in very early times, they should never have been represented on seals or in art, because of a superstition against them such as existed at various times among other inhabitants of warm countries like the Egyptians, the Hebrews and the people of India[5]. We know that, in Egypt, swine were much despised

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[1] See p. 1.

[2] B.S.A., IX, Plate XII, fig. 57.

[3] B.S.A., VI, p. 29.

[5] Keller, "Die Antike Tierwelt", Band I, p. 393.

[4] B.S.A., VI, p. 29.

in antiquity previous to the establishment of the New Kingdom[1] (XVIII the Dynasty or L.M. I). Swine herders were a despised class of society. The souls of the condemned were thought to be incarnated in the bodies of swine. Keller says that not until the time of the Ptotemies did swine-herding flourish in Egypt. In view of the close connection between Crete and Egypt in M.M. and L.M. periods, a similar attitude toward swine may have prevailed in Crete. Hence, it seems difficult to judge the extent to which swine may have been domesticated, from the evidence available, although a certain amount of domestication, at least for the rulers of Knossos, is well established. There are indications that some species of dog was domesticated by the Minoans and used in hunting.[2] Domesticated fowl, too, appear to have been known.[3] Lack of evidence for the ass would seem to indicate that it was unknown in Minoan Crete until a very late period.

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[1]Keller, "Die Antike Tierwelt", Band I, p. 393.
[2]Hall, Aegean Archaeology, p. 256.
[3]B.S.A., IX, p. 55.

II. FOODS

Actual remains of various kinds of legumes and cereals seem to indicate that these contributed an important share to the Minoan diet. At Knossos in a work-room adjoining the Lapidary's Workshop in a group of basement rooms, was found a small pithos filler with small burnt beans which Dr. Evans says were recognized by the workmen as Egyptian beans, "a dwarf kind at present imported to Crete from Alexandria and of which there is an abundant supply in the Candia market"[1]. In the remains of another pot were found carbonized seeds of a similar but smaller kind. The northern part of the adjoining work-room had also been used as a store for grain. It was covered with large quantities of a carbonized cereal, apparently wheat, extending in a thin stratum. Here, the wheat had probably been heaped on the floor, as there was no trace of a special receptacle. At Palaikastro, in House B[2], Mr. Bosanquet found three jugs containing well-preserved grain of three kinds, identified by Mr. Percy Newberry, who examined samples, as wheat[3], the garden-pea like that cultivated in Egypt from the XIIth Dynasty onward[4], and a smaller variety of pea

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[1] B.S.A., VII, p. 20 f.

[2] B.S.A., VIII, p. 316.

[3] Mr. Bosanquet notes that Mr. Newberry has discovered the original habitat of wheat in Petrie's "Hawara, Briahmu and Arsinoe", pp. 49-50.

[4] B.S.A., VIII, p. 316 and footnote..

which is widely distributed in the Southern Mediterranean region[1]. By the same excavator there were later found jars containing peas and barley[2]. In another house at Palaikastro, Mr. Dawkins found a pithos containing carbonized peas[3].

He found also at Palaikastro remains of a hole-mouthed jar and a small jug decorated with a naturalistic floral decoration of the pod-bearing sprays of some leguminous plant, resembling the pea[4]. This was executed in the light-on-drak technique of the L.M. I period. The same plant appears on some fragments of pottery from Knossos of which Evans says[5], "Very remarkable are the fragmentary remains of a huge thick-walled vessel, the form of which unfortunately can not be completed. It displays zones decorated with peas or large vetches, a favorite subject with the Ceramic artists of this period." The completed drawing of a group of these fragments is given in B.S.A., IX, p. 117, fig. 72. Judging from the actual remains of stores of peas and the apparently frequent use of the plant in artistic decoration of the L.M. period, it would seem safe to infer that peas were a staple food with the Minoans of that period, at least, both a large and a small variety being used. Doubtless if the garden pea was cultivated in Egypt as early as the XIIth Dynasty[6], it may have been

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[1]B.S.A., VIII, p. 316.

[2]B.S.A., IX, p. 280.

[3]B.S.A., IX, p. 292.

[4]B.S.A., XI, p. 289, fig. 15a and b.

[5]B.S.A., IX, p. 116.

[6]See p. 18.

cultivated in Crete in the contemporary M.M. I and M.M. II periods.

Beside the remains of wheat mentioned above, there have been found other remains of grain designated by Mr. Evans, according to the English use, as "corn". Thus he says[1] that in the Third Magazine opening from the Long Gallery were discovered twelve large pithoi some of which contained remains of burnt corn. In the Temple Repository of the Central Palace Sanctuary among votive and sacrificial remains, was an abundance of burnt corn which Mr. Evans thought[2] might have had an offertory character. These remains may have been wheat or barley like that from Palaikastro[3]. A doubtful representation on a Middle Minoan Kamares "Schnabelkanne" (Vases with enormous beak-spouts, a form characteristic of E.M. III), found on the hill of Kephala, is identified by Mr. Welsh as either three ears of barley or three bunches of grapes[4].

There are indications of stores of grain in the clay tablets from Knossos. Among the ideographic signs found with the graffito characters in the heiroglyphic inscriptions of Eastern Crete were representations of jars filled with grain[5]. Dr. Evans thinks that this heiroglyphic system was earlier than the linear system which reached its greatest development in L.M. II. Hence the reference to the storing of grain in jars would probably go back to the M.M. period[6]. Grains

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[1] B.S.A., VI, p. 21.

[2] B.S.A., IX, p. 41.

[3] See. p.19.

[4] B.S.A., VI, p. 87.

[5] B.S.A., VI, p. 61.

[6] B.S.A., VI, p. 62.

of what Dr. Evans terms "corn" - probably wheat or barley - appeared on seal impressions from the Room of the Archives[1]. Inscribed tablets referring to graneries were found in the domestic quarter, having perhaps fallen through from the Room of the Archives[2].

Various implements are indicative of the raising of grain and its use for food. On the Harvesters' Vase from Hagia Triada of the L.M. II period is seen a procession of men carrying what Hall identifies[3] as flails and other agricultural implements. Several bronze sickles of the L.M. stage have been found, one at Palaikastro in House B by Mr. Bosauquet among M.M. remains[4]. Mrs. Hawes, the excavator of Gournia, says[5] that every site of a Minoan town has yielded stone mortars and querns for grinding corn. For instance, at Palaikastro, in house j was found a pestle[6], in house e a saddle-quern, in house A a saddle quern[7], and in the other houses were similar finds. At Kouramenos in house A was a mortar imbedded in the floor and much worn[8]. Such discoveries were usual in the houses of towns like Palaikastro, Praesos, Zakro and others, showing that grain must have been raised and ground by hand into meal for home use. Saddle querns were found at Hagios Nikolaos by Mr. Todd in the L.M. remains[9]. Mortars of rough limestone

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[1]B.S.A., VIII, p. 77.
[2]B.S.A., VIII, p. 76.
[3]Hall, "Aegean Archaeology", p. 62.
[4]B.S.A., IX, 287.
[5]Hawes, "Crete the Forerunner of Greece", p. 37.
[6]B.S.A., IX, p. 291.
[7]B.S.A., IX, p. 294.
[8]B.S.A., VIII, p. 308.
[9]B.S.A., VII, p. 124.

were found among M.M. Kamares fragments at Zakro by Mr. Hagarth[1].

The meal when ground was probably used in porridge and in some form of bread. Stew-pans suitable for the making of porridge were very common on all sites. It can hardly be supposed that a people who developed so highly the art of firing pottery in ovens should not have developed methods of baking food in them. Mr. Dawkins even describes a clay vessel from Palaikastro as a bread pan or pan for baking bread[2], likening it to a similar vessel ffrom Tiryns which has the same indentations on the inside of the bottom so that the shape of these holes would be produced in relief on the bread[3].

There is a remarkable absence of direct evidence for viticulture and the making of wine in Minoan Crete. However, many indications point to the use of wine. Mrs. Hawes states that no representation of the vine occurs except one doubtful instance on a faience plaque[4]. The "Schnabelkanne" found at Knossos with a molded design variously identified as three ears of barley or bunches of grapes has been mentioned[5].

The strongest suggestion of the use of wine is to be found in the beautifully wrought fillers or strainers of L.M. period. These tall, graceful, funnel-shaped vessels with a perforation at the bottom through which liquid could be poured into another vessel below were

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[2]B.S.A., IX, p. 325, fig. 25.

[1]B.S.A., VII, p. 124.

[3]See Schliemann "Tiryns", p. 116, where he says that a similar pan is now used in Mycenae.

[4]Hawes, "Crete the Forerunner of Greece", p. 37.

[5]See p. 20.

were fashioned of variegated marble pottery and precious metals, marble apparently being the favorite material at Knossos. Of these fillers or strainers, Burrows says[1], "The common type may have been used merely for pouring wine or water into narrow-mouthed vessels like the false-necked vases, which must have been hard to fill; but this kitchen or store-room use hardly accounts for the more magnificent specimens. When describing an Egyptian vessel of similar shape but of blue glazed faience[2], Mr. Henry Wallis remarks that on one of the banqueting scenes from Tell-el-Amarna King Akhenaten (1380-1362 and therefore contemporary with L.M. III) holds a bowl into which a slave pours wine through what is clearly a strainer. As such a custom is not usually represented in Egyptian art, he suggests that perhaps some particular wine needed straining, as in Sicily today the grape-skin and stones are often left in the wine of the country until it is brought to the table". Burrows goes on to say that the use of something similar to undecanted vintage port might explain the prevalence of this type of vase in the L.M. III age. Sir Arthur Evans makes the significant statement in B.S.A.,VI, p. 16, that, "vessels of the same funnel-shaped type in precious metals are held by the Keft chieftians on the frescoes of Thothmes III's time". Since Thothmes III, who reigned 1479-1447 B.C., was contemporary with the Minoan L.M. II period, and since the Keft chieftians were perhaps Minoans from Crete[3], we have reasonable evidence for the use of the filler or strainer vases in the L.M. II period of Crete.

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[1]Burrows, "Discoveries in Crete", pp. 91 f.

[2]Hall, "Oldest Civilization of Greece", p. 186, fig. 53.

[3]Hall, "Ancient History of the Near East", p. 244.

Many examples testify to their extensive use in L.M. III - five of marble, two of them fluted, are represented in the Ashmoleum Museum[1]. Mr. Dawkins mentions seventeen of pottery from Palaikastro[2]. A well-known example is the tall filler from Zakro with decoration of shells and sea-anemones[3]. The Cup-bearer on the Knossian fresco carries a beautiful strainer, apparently of silver mounted with gold[4]. Fillers have been found also at Gournia[5]. Hall says[6] that a small filler of obsidian from Tylissos is one of the greatest treasures of the Candia Museum. Obsidian was an imported stone, coming from Melos[7].

The explanation of the use of such vessels for straining wine seems more plausible than any other. Strainers would probably never have been used for olive oil which can be cleared by settling; nor, as Mr. Burrows implies, does it seem that so much artistic skill and precious material would have been expended upon vessels intended for ordinary culinary purposes. No doubt, men associated handsomely wrought and expensive vessels with the pleasures of wine-drinking in Minoan Crete even as they have done ever since. If these fillers were used with wine, it follows that many of the large pithoi in the different Palace magazines at Knossos were probably used for storage of wine.

That the vine could have been cultivated in Crete in Minoan times is possible, even though we have no certain evidence of it. The

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[1]Burrows, "Discoveries in Crete", p. 91, footnote 5.
[2]B.S.A., IX, p. 130.
[3]J.H.S., XXII, Plate XII, no. 1.
[4]B.S.A., VI, p. 16.
[5]B.S.A., IX, p. 312.
[6]"Aegean Archaeology",p. 65.
[7]B.S.A., IX, p. 51.

vine flourishes in the island today; and in the time of Venetian occupation Cretan vines were famous[1]. It was formerly supposed that the vine came to Crete through Phoenician colonization, spreading from there to Naxos and Chios[2]. However, in the last edition of Hehn, p. 87, the editor states that, "though the vine may have come from the east to Crete and spread from there north and west, still it is certain that before the spread of vine cultivation, the vine itself had spread through all South Europe and a part of Middle Europe; and it is even possible that before the encroachment of man on primitive vegetation the vine had spread as at present. By means of its berries, easily adapted to being spread by birds, the vine must have struck root wherever climatic conditions allowed." Hence, the vine no doubt existed in Crete as early as the earliest civilization. Moreover, it was probably cultivated there at a comparatively early date, as we know from grape stones found with mummies[3] that it was cultivated in Egypt by 2000 B.C. or M.M. II. On the whole it seems a reasonable assumption that the Minoans enjoyed the use of wine, and most authorities apparently agree[4] that wine culture existed on a fairly large scale in M.M. and L.M. periods[5].

We know from an actual wine-press found at Palaikastro by Mr. Dawkins[6] that wine was made in the latest stage of the decadent L.M. III period. In a Mycenean house, he uncovered a wine press with a bed and receptacle for the most of which he says, "The bed of the press

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[1]Encyclopedia Brittanica, "Crete".
[2]Hehn, "Kultur-Pflanzen und Haustiere", p. 70.
[3]Encyclopedia Brittanica, "Vine".
[4]B.S.A., VIII, p. 237.
[5]Encyclopedia Brittanica, "Aegean Civilization".
[6]B.S.A., IX, p. 295.

is supported on two sides by the house wall and on the third side by a wall built out for that purpose. On the fourth side it slopes down to a pithos which is imbedded in the fine hard plaster of the bed to its lip. Into this pithos the juice would flow off the slightly sloping bed." No doubt we find no such arrangements among earlier remains because of the ease with which grapes, unlike olives, could be crushed by the more primitive method of trampling. The olive presses that are so common are identified as such because they require accommodation for a much smaller volume of juice than would the wine-press[1].

There is abundant evidence to show that the Minoans cultivated the olive extensively, using both its fruit and oil as articles of food. On some sites have been found actual remains of olive seeds, notably at Palaikastro[2] and at Phaestos[3] by the Italian excavators. Many representations of the olive occur. A tree which appears on one side of the Hagia Triada sarcophagus (probably L.M. I) is identified by the editor of Hehn's "Kultur-Pflanzen und Haustiere" as an unmistakably cultivated olive tree[4]. A fragment of carved steatite from Knossos, probably contemporary with the L.M. I steatite vases of Hagia Triada, shows a boxer standing in front of a stone wall over which grows an olive[5]. Dr. Evans says[6] that "at Knossos we find olive sprays appearing as a motive of decoration both for frescoes and vase paintings, and

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[1]B.S.A., VII, p. 83.

[2]B.S.A., IX, p. 280.

[3]B.S.A., VII, p. 83.

[4]Hehn, "Kulturpflanzen und Haustiere", p. 120.

[5]Hall, "Aegean Archaeology", pp. 63 f. and Plate XV, 2.

[6]B.S.A., VII, p. 83.

apparently also on the pictographic tablets in a commercial relation." Naturalistic olive sprays appear on a vase of L.M. II ware from Pseira[1]. A representation of some faience remains from Knossos, given in B.S.A., IX, p. 68, fig. 45, shows a fruit identified by Dr. Evans as a plum, but certainly resembling an olive in shape.

There are several indications of the use of olive oil, the most important of them being remains of oil press-beds found in various parts of the island, at Kouramenos[2], Palaikastro[3], Praesos[4], and elsewhere. The most elaborate of these was discovered at Knossos[5], where was uncovered a whole system of rooms devoted to the manufacture, refining and storage of olive oil[6], in the northeast or industrial section of the Palace. From the Room of the Olive Press, a stone runnel led by an angular course to the spout in the wall of the open Court of the Oil-Spout which was probably devoted to the filling of various vessels with oil. Dr. Evans surmises that short breaks in the course of the oil-duct were probably occupied by settling vats where the impurities of the fluid and its coarser portion could be allowed to settle on a bed of water that could be raised or lowered in the manner usual in

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[1]Hall,"Aegean Archaeology", p. 98.

[2]B. S. A., IX, p. 334.

[3]B. S. A., XI, p. 276.

[4]B. S. A., VIII, p. 264.

[5]B. S. A., VII, p. 82.

[6]B. S. A., VIII, pp. 8 ff.

such reservoirs. Chambers to the north and east of the Court of the Oil Spout were found to be a series of magazines containing larger pithoi than occurred elsewhere in the Palace[1]. This no doubt constituted the permanent store of oil. Dr. Evans thinks these huge pithoi were filled in situ by means of ducts from the oil spout or a branch of the stone conduit on the terrace above[2].

An important evidence of the storage of oil are the indications of fierce conflagration around the upper vats in the Fourth Magazine[3]. Dr. Evans thinks that a considerable storage of oil must have been the contents of the pithoi discovered there[4]. In all the eighteen magazines opening on the Long Gallery were remains of pithoi, as many as twenty being found in the Fifth Magazine[5] and twenty-two in the Eleventh[6]. In the pavement of most of the magazines were stone cists, lead or cement lined, which may have been used as stone vats for oil or other liquids. Some of these cists or <u>kaselles</u> as they were termed by the workmen, had been placed in such a position that they could be opened or made use of without displacing the pithoi[7]. Dr. Evans says of them[8], "From the entire absence of any sign of grain or other solid stores in the store-

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[1]B.S.A., VIII, p. 10, and fig. 5, p. 11.

[2]B.S.A., VIII, p. 10.

[3]B.S.A., VII, p. 83.

[4]B.S.A., VII, p. 83.

[5]B.S.A., VI, p. 22.

[6]B.S.A., VII, p. 39.

[7]B.S.A., VII, p. 45.

[8]B.S.A., VII, p. 45.

jars, the contents of which were all carefully examined, it is almost certain that they contained liquid stores. It is possible, therefore, that the upper receptacles of the cists in front of them were used as small vats into which oil or wine may have been poured from these clay butts. The liquid thus disposed of would then have been much more accessible for transference into smaller vessels, than when it lay within the high walls of the pithoi. The entire absence of the upper lids of the kaselles may in some cases be explained by the presumption that they had been always left open for this purpose or provided only with movable wooden lids." After a supplementary exploration of these kaselles the following year, he wrote[1] "From the blackening of their walls and of the surrounding part of the Magazines, it is clear that they had served in many cases as oil vats". Still more excavation showed that in the latest period of the existing Palace which Dr. Evans says[2] is "par excellence the age of oil storage", a change took place in the floor of the Magazines, the earlier cists being either covered over with a new pavement as in the Eighth Magazine or, as was more usually the case, reduced to mere shallow recipients, probably intended to hold the oil that might escape from broken or overturned jars[3].

Simpler devices for the refining of oil than that at Knossos were found at Palaikastro in several houses[4] and at Zakro[5] and elsewhere. In this arrangement, a spouted jarstood on a support with pithoi below it, the spout being flush with the bottom of the jar to drain off the

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[1] B.S.A., IX, p. 28.
[2] B.S.A., X, p. 36.
[3] B.S.A., X, p. 36.
[4] B.S.A., IX, p. 279.
[5] B.S.A., IX, p. 279.

water and impurities first. Mrs. Hawes says of Gournia[1], "Some houses contained vats for washing oil, standing on stone benches with the amphorae and stamni before them to catch the liquid, just as they were left 3500 years ago."

These large stores of oil probably served other economic purposes beside that of food, being employed no doubt for burning in the stone lamps so common in the Palace[2] and for anointing the body. However, it seems reasonable to assume that among the Minoans as among other ancient people, olive oil should have been used to supply the fat and oil[3] needed in the diet and that the fruit should have served as an article of food. In the northeast magazines at Knossos, connected with the industrial quarters[4], were found many smaller pithoi of the common "trickle ornament"[5] variety among remains of rustic vessels of all kinds, showing that stores of oil were probably kept there for temporary use in cooking. The stores of olive stones found in jars[6] might indicate that the Minoans preserved the olive fruit in some such manner as did the Romans[7] several centuries later.

Just when the olive began to be cultivated in Crete is difficult to determine. Hehn's idea, stated in his "Kultur-Pflanzen und

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[1]Hawes, "Crete the Forerunner of Greece", p. 100.

[2]B.S.A., VII, p. 83.

[3]Hawes, "Crete the Forerunner of Greece", pp. 37 f.

[4]B.S.A., VII, pp. 72-75.

[5]B. S.A. VII, p. 73.

[6]See p. 26.

[7]Johnston, "Private Like of the Romans", p. 194.

Haustiere", p. 103, that the oil of Homeric Greece was imported from the East and that the Egyptians were unacquainted with the use of the olive was a mistake. In the latest edition, it is pointed out, p. 121, by the editor that the olive tree with its leaves and fruit appears on Egyptian wall-paintings in the XVIIIth Dynasty and that discoveries have shown it to have been used as a food. These evidences are contemporary with the L.M. I evidences in Crete. Hehn's editor adds on p. 122, "One may say that cultivation of the olive in the Orient spread, from a point as yet unknown, in a direct line over Egypt, Syria and Asia Minor, and from the Orient was doubtless carried to Greece in pre-Homeric times." Discoveries in Crete would tend to place its crossing to that point at least as early as M.M. age, since the evidence shows that olive groves must have been extensive by the time of L.M. I.

There seems little doubt that fish formed an important part of the Minoan diet. The most convincing evidence of this was found at Knossos in a chamber adjoining the basement gallery under the Corridor of the Cupbearer, among ceramic remains of the pure Kamares Period or M.M. I and II. Here, at the bottom of a barrel-shaped vessel with a tripod base, Dr. Evans found what he describes[1] as "a grey deposit with fishes' vertebrae, showing that it had been used to store food." In this connection, he mentions also an intaglio found on the site of Knossos which represents a fisherman holding in either hand a fish and a polyp, and from which he infers that, in Crete, fish formed a regular part of the Mycenean or Late Minoan diet[2]. On another gem impression from

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[1]B.S.A., VII, p. 10.

[2]B.S.A., VII, p. 10.

Knossos there appear a fish and a polyp in a rocky pool[1]. Mr. Bosanquet says[2] that a design resembling two fish which was cut on an amygdaloid gem or carnelian found at Praesos, is a common subject on gems of the M.M. period.

Since all the more important towns of Crete are sea-ports[3], it seems reasonable to suppose that the inhabitants who so early undertook sea voyages, should have been interested in deep sea life[4] and adapted whatever served their needs. This inference seems to be borne out by remains of actual implements used in fishing and by a lavish use of marine subjects in artistic decoration. At Praesos[5] among Late Minoan bronze objects on the Altar Hill and again at Palaikastro[6], Mr. Bosanquet found bronze fish-hooks of which he says there were already examples in the Candia Museum. Mrs. Hawes, the excavator of Gournia, says[7] that bronze fish-hooks of precisely the same shape as ours, lead sinkers for lines, and net-weights are frequently discovered in Minoan towns. These would probably belong to the L.M. I period, the height of prosperity for the smaller towns of Crete[8]. Hall, in "Aegean Archaeology", p. 111, says that the ruins of Cretan towns yield many fishing-weights of clay pottery. Again on p. 37, he observes that the people of the tiny island of Pseira, near Mochlos, were probably fishermen and the

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[1]B.S.A., IX, p. 68.
[2]B.S.A., VIII, p. 244.
[3]Hawes, "Crete the Forerunner of Greece", p. 45.
[4]Hawes, "Crete the Forerunner of Greece", p. 42.
[5]B.S.A., VIII, p. 259.
[6]B.S.A., VII, p. 288.
[7]Hawes, "Crete the Forerunner of Greece", pp. 44 ff.
[8]Hawes, "Crete the Forerunner of Greece", p. 19.

most art-loving fisher-folk that ever lived. On the Harvesters' Vase from Hagia Triada appears a curious implement that has been variously interpreted, one conjecture being that it is a trident with a hook attached, used for spearing fish[1].

Seal impressions, faience remains, frescoes, and vase-paintings testify to the Minoans' intimate acquaintance with fish, polyps and other sea life. A fish appears on the well-known Phaestos disk of the M.M. III period, along with such commonplace articles as carpenter's tools[2]. Seal impressions from the Temple Repositories of Knossos (M.M. III) represent the crab, the dolphin, and a group of three fish[3]. In the Room of the Archives were impressions of flying fish and a school of dolphins[4]. Faience fragments in the Eastern Temple Repository show strikingly naturalistic marine designs of rocks, cockle shells, flying-fish and the nautilus[5]. These belong to M.M. III art.

On vase-paintings, fish and marine objects are exceedingly common, especially in L.M. I, the period of greatest naturalism in Minoan art, and the preceding M.M. III stage[6]. The cuttle-fish is frequent in its natural form[7], the best representation of it being that of the "Octopus Vase" from Hournia (L.M. I) which shows two writhing octopods surrounded by smaller sea animals[8]. Two Bügelkanne (or "stirrup jugs" so called

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[1]Baikie, "Sea Kings of Crete", p. 226.
[2]Hall, "Aegean Archaeology", Plate XXXIII, p. 220.
Hawes, "Crete the Forerunner of Greece", pp. 85 f.
[3]B.S.A., IX, p. 56.
[4]B.S.A., VIII, p. 77.
[5]B.S.A., IX, p. 68 f. and fig. 46, p. 69.
[6]Hall, "Aegean Archaeology", pp. 79 ff.
[7]Reisinger, "Kretische Vasenmalerei", p. 27.
[8]Hall, "Aegean Archaeology", p. 90, fig. 25.

by archaeologists, from a fancied resemblance in the small handles which spring from the vase to the false spout) with a cuttle-fish design were found in the Room of the Lotus Lamp at Knossos[1]. Among L.M. remains in the North-East Hall was a low "Stirrup" vase with a fish design, mentioned in B.S.A., VII, p. 76. Convenionalized polyps appear on pottery from the houses of Zakro[2]. A vase of the L.M. III period from the Royal Tomb at Petsofa is also decorated with conventionalized cuttle-fish[3]. Dolphins appear to be swimming around on a jug from Pseira[4]. Nautili and mussel-like objects appear on a filler from Palaikastro[5]. Other sea-life, star-fish, snails, coral, tritons, and sea-weed, are employed in the background of these patterns.

That we do not find on Minoan vases any representation of the fisherman himself such as we find on the Fisherman Vase[6] from Phylakopi which shows "a dreadful procession of goggle-eyed fishermen, each holding a dolphin by the tail"[7] is no doubt due to the more refined Cretan taste which avoided such atrocities. Hall says[8] that no representation of the human figure appeared on a true Cretan pot of any period.[9]

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[1]B.S.A., VI, p. 44.
[2]B.S.A., VII, p. 139.
[3]Hall, "Aegean Archaeology", p. 99, fig. 30-3.
[4]Hall, "Aegean Archaeology", p. 91, fig. 26-1.
[5]Reisinger, "Kretische Vasenmalerei", pp. 27 f.
Hall, "Aegean Archaeology", p. 91, fig. 26-2.
[6]Mackanzie, "Cretan Palaces", B.S.A., XII, pp. 236 f.
[7]Hall, "Aegean Archaeology", p. 85.
[8]Hall, "Aegean Archaeology", p. 85.
[9]It should be remembered that the figures on the Warrior, Chieftain, and Boxer Vases are carved in steatite, not painted on pottery.

In frescoes, the dolphins, flying-fish and other deep-sea life are frequent. Examples are the wall painting in the Queen's Megaron at Knossos[1] and the fresco of flying-fish at Phylakopi which was probably painted in Crete[2].

In B.S.A., VIII, p. 80, fig. 45, is shown a small fish fashioned of gold which was found in the Palace at Knossos, belonging perhaps originally in the Treasure Chamber. This fish greatly resembles in outlines an ordinary sun-fish or shad.

Much of the above evidence would seem to show that the Minoans were accustomed to fishing by means of hook-and-line, harpoon, and net. The cuttle-fish, so frequently represented, was perhaps eaten at that time, as it is eaten today on Mediterranean coasts. The small fish and polyps and mussels were also probably articles of food. Whether or not the dolphin was eaten is difficult to determine. It has been used as an article of food in historic times when considered as a fish[3]. In antiquity, it was caught primarily for its oil[4]; but this seems doubtful in the case of the Minoans who used olive-oil so lavishly. It is possible that the dolphin had already become associated with commerce because of its fondness for men. Reisinger remarks in this connection[5], that the dolphin has always been a "Menschenfreund" and "seine geringe Scheu vor den Menschen und seine Vorliebe für Musik haben bewirkt dass er frühzeitig in Sagen und Märchen als Menschenfreund erscheint."

[1]B.S.A., VIII, pp. 58 f.

[2]Hall, "Aegean Archaeology", p. 184 and plate XXX.

[3]Encyclopedia Brittanica.

[4]Pauly-Wissowa, Real-Encyclopädie, Wagner, "Delphin", col. 2505.

[5]Reisinger, "Kretische Vasenmalerei", p. 28.

Whether or not the Minoans cultivated the date-palm for its fruit, is uncertain. Representations of some variety of palm are not infrequent, as they appear on one of the Vaphio cups, on gems and rings and vases[1]. However, these have not been identified absolutely by archaeologists and botanists as date-palms and consequently may represent only the dwarf-palm which is abundant in Crete. If these are merely the dwarf-palm, we have no direct evidence that the Minoans used the date as food. On the other hand, we know that the Egyptians cultivated the date-palm as early as the Xth or XIth Dynasty, having perhaps learned it from intercourse with Punt[2]. It is possible, therefore, that the contemporary Middle Minoans who adopted many elements of Egyptian civilization may have adopted the cultivation of the date-palm. Whether or not they ever did this, and used the fruit as a food, it is at any rate possible that they made practical use of the dwarf-palm. Of the fan-shaped leaves of this tree were made the dusters or brooms with which mosaic floors were cleaned by the later Romans[3]; and even now, brooms, twisted cord, baskets, and mats are fashioned from their fibers[4]. Therefore, the Minoans may have used, on their cement or gypsum paved floors, brooms supplied by the dwarf-palm; and their string, of which fragments have been found clinging to remains of clay documents, may have been made from the fibers of dwarf-palm leaves.

Representations of the fig-tree are frequent but always appearing in such connections as to show that it was a sacred tree. In "The

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[1]Hehn, "Kultur-Pflanzen und Haustiere", p. 284.
[2]Hehn, "Kultur-Pflanzen und Haustiere", p. 283.
[3]Horace, "Sat.", 2-4-83.
[4]Hehn, "Kultur-Pflanzen und Haustiere", p. 275.

Mycenean Tree and Pillar Cult", this subject of the sacred fig tree is treated[1], and several representations of the tree described. One of these appears on a fragment of an early steatite pyxis from Knossos in which the characteristic trifid outline of the leaf is clearly defined[2], the tree being shown in connection with an altar; another on a late signet-ring from Knossos, shows two divinities before a grove of sacred trees, enclosed within a temenos wall, and having foliage which from its triply divided character may identify them as fig trees. Dr. Evans says, p. 104, "The traditional sanctity of the fig tree is well marked in the later cult of Greece..... Both on the score of fruitfulness and from the character of the spots where it is found, the fig tree may well have inspired a special veneration in the primitive Aegean cult. In Crete, it still grows wild where no other tree can fix its roots, at the mouth of caves of indigenous divinities and in rocky mountain clefts beside once sacred springs." It seems probable, therefore, that the fig tree, being so common a native tree and so fruitful, must have become associated very early with the cult, for the very reason that it was so useful as a food, just as the most common and useful domesticated animals, the ox and the goat, became associated with religious objects[3].

A variety of the quince was no doubt used as a food in Minoan Crete. The common quince is native to Persia and Anatolia and perhaps also to Greece and Crimea, although in the two latter regions it may be a relic of former cultivation[4]. The Greeks in classical times were

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[1] J.H.S. XXI, pp. 101 ff.
[2] J.H.S., XXI, p. 103, fig. 2.
[4] Encyclopedia Brittanica, "Quince".
[3] See p. 10.

acquainted with a common variety which they called "Cydonion" from Cydon in Crete from whence it was obtained and from which the modern names are derived. Mrs. Bosanquet in "Days in Attica" mentions the quince in her account of Canea on the north-west coast of Crete. "Its name (Canea) is a corruption of the classical 'Cydonia' and this again is imbedded in modern Greek as the word for quince. If the Greeks knew quinces in the first instance as 'Apples of Cydonia', is it not possible that quinces were cultivated in prehistoric times and carried by the Minoans from Crete to Greece?" This seems an interesting and plausible possibility. Hence, the quince may have been an important article of food with the Minoans.

The orange of which an excellent quality abounds in modern Crete and forms an important article of export, was not native there and was not cultivated by the Minoans, being unknown even by the Greeks and Romans[1]. Gallesio has shown that the orange was native to the Burmese peninsula and south China and was probably cultivated first in India, spreading thence to Europe[2]. We can not, therefore, suppose that oranges were ever eaten by the Minoans.

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[1]Encyclopedia Brittanica, "Crete".

[2]Encyclopedia Brittanica, "Orange".

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